REMARKS

Amendments

Amendments to the Claims

Applicant has amended the claims to more particularly point out what Applicant regards as the invention. No new matter has been added as a result of these amendments. Support for the amendments may be found at least in paragraphs 17-20 on pages 5-6 of the application as originally filed.

Objections

Objections to the Specification

Examiner takes the position that the claimed "computer readable storage medium" is not sufficiently defined in the specification to permit differentiation from a "computer readable medium." Applicant respectfully submits that one skilled in the art will immediately recognize that a storage medium, which has been held by the Federal Circuit to be patentable subject matter, cannot properly be interpreted to cover a signal or carrier wave. Thus, a storage medium may be differentiated at least on this basis. Accordingly, Applicant respectfully requests that the Examiner withdraw the objection.

Objections to the Abstract

The Examiner objected to the abstract because it contains the paragraph heading [0046] which should be removed. Applicant has amended the abstract to overcome this

objection. Accordingly, Applicant respectfully requests that the Examiner withdraw the objection.

Rejections

Rejections under 35 U.S.C. § 101

Claims 12-19

Claims 12-19 stand rejected under 35 U.S.C. § 101 as being drawn to non-statutory subject matter. As stated above, the claimed "computer readable storage medium" cannot properly be interpreted to cover a signal or carrier wave.

Accordingly, Applicant respectfully submits that the invention as claimed in claims 12-19 is statutory subject matter and respectfully requests the withdrawal of the rejection of the claims under 35 U.S.C. § 101.

Rejections under 35 U.S.C. § 103

Claims 1-6, 12-17, 20-23 and 26-30

Claims 1-6, 12-17, 20-23 and 26-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sohn, et al., U.S. Publication 2003/0202592 in view of Carlbom, U.S. Publication 2003/0033318 and in further view of Guo, et al., U.S. Patent 6,353,678.

Sohn teaches a system in which frames of video data may be encoded using disparity vectors, motion vectors, or both. When encoding with disparity vectors, a disparity vector is generated from a reference frame relative to a destination frame. When the frame is subsequently decoded, the reference frame is used in conjunction with the disparity vector to recreate the destination frame. When using disparity vectors for

encoding, the reference frame and destination frame occur at the same moment in time, but represent different views of a scene.

Carlbom discloses a system for tracking the actual position of a physical object in real space. The position of the physical object is used as a hint to continue tracking the physical object in real space when the physical object leaves the field of view of one camera and enters the field of view of another camera.

Guo discloses detecting moving objects in video.

Claims 1, 12, 20, and 26 claim identifying pixels in a first frame and constraining a search range associated with a second frame. The second frame is offset in time from the first frame. Constraining the search range includes finding a position of an initial seed on an epipolar line using a disparity vector. The second frame is searched within the constrained search range for a match of the pixels identified in the first frame for subsequent use in computing a motion vector for the pixels.

Applicant respectfully submits that the combination is improperly motivated because Carlbom is not analogous prior art. To rely on a reference under 35 U.S.C. §103, the reference must be analogous prior art (MPEP 2141.01(a)). The invention as claimed in claims 1, 12, 20, 26 computes motion vectors which may be used to reconstruct the pixels from a source frame in a destination frame. The term "motion vector" is a term of art within the area of video encoding and decoding and refers to techniques used to reduce the bit rate of a video stream by providing a way of reconstructing video data based on previously decoded video data. Carlbom is concerned with tracking the position of a physical object in the real world. Nowhere does Carlbom teach or suggest predicting a frame of video data using the position of the physical object. Carlbom seeks to track the position of the physical object in order to continue recording the progress of the object.

Applicant respectfully submits that this is entirely different from computing a motion vector to reconstruct pixels. Accordingly, Carlbom is non-analogous art and cannot be relied upon in a rejection under 35 U.S.C. §103.

Examiner takes the position that it would be obvious to use an epipolar constrained motion estimation method taught by Carlbom to obtain the motion vectors of Sohn. However, the proposed modification cannot render the prior art unsatisfactory for its intended purpose (MPEP 2143.01 (V)). Carlbom teaches tracking the position of a physical object in real space. Sohn teaches computing motion vectors. Applicant respectfully directs the Examiner's attention to paragraphs 17-20 on pages 5-6 of the application as originally filed for further explanation of motion vectors. In contrast, Carlbom uses known mathematical techniques to track a physical object. Applicant respectfully submits that tracking a physical object is not equivalent to reconstructing video data using a motion vector as the term is defined in the specification and in the art. If, as Examiner proposes, Sohn were modified with Carlbom to track physical objects rather than compute motion vectors, Sohn would cease to function. Thus, modifying Sohn with Carlbom would render Sohn unsatisfactory for its intended purpose. Accordingly, there is no suggestion or motivation to make the proposed modification.

Examiner appears to be equating the disparity vector search ranges in Sohn with the claimed constrained search range associated with a second frame offset in time from the first frame. However, the Sohn search ranges are limited to searching for counterparts in other views at the same moment in time. In contrast, the invention as claimed constrains a search range to an area of a second frame that is offset in time from the first frame. Thus, the disparity vector search ranges in Sohn cannot be properly interpreted as teaching the claimed limitation.

Moreover, Sohn uses disparity vectors directly as a means of encoding video data. In contrast, the invention as claimed uses disparity vectors as an initial seed value for the search area in the second frame. The direct encoding with disparity vectors taught by Sohn cannot be properly interpreted as teaching using a disparity vector as an initial seed for a search area as claimed.

Therefore, the combination cannot render obvious Applicant's invention as claimed in claims 1-6, 12-17, 20-23 and 26-30, and Applicant respectfully requests the withdrawal of the rejection of the claims under 35 U.S.C. § 103(a) over the combination.

Claims 7, 18 and 24

Claims 7, 18 and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sohn, et al., U.S. Publication 2003/0202592 in view of Carlbom, U.S. Publication 2003/0033318, in view of Guo, et al., U.S. Patent 6,353,678 and in further view of Steffens, U.S. Patent 6,301,370.

Steffens teaches using disparity vectors to identify faces in video. Claims 7, 18, and 24 depend upon claims 1, 12, and 20. As stated above, Sohn in view of Carlbom and Guo do not render unpatentable the invention as claimed in claims 1, 12, and 20. Steffens, similarly to Carlbom, is directed to predicting the motion of an object in the real world. As stated above, predicting an object's motion in the real world cannot be properly interpreted as predicting pixels using motion vectors. Thus, there would be no motivation to using disparity vectors as taught by Steffens as the claimed initial seeds. Thus, Steffens does not cure the shortcomings of Carlbom and Sohn..

Therefore, the combination cannot render obvious Applicant's invention as claimed in claims 7, 18, and 24, and Applicant respectfully requests the withdrawal of the rejection of the claims under 35 U.S.C. § 103(a) over the combination.

Claims 8-11, 19, 25 and 31

Claims 8-11, 19, 25 and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Carlbom, in view of Guo, et al., U.S. Patent 6,353,678 and in further view of Newman, U.S. Patent 6,154,600

Newman discloses user input using a slider. Claims 8-11, 19, 25 and 31 depend upon claims 1, 12, 20, and 26. As stated above, Sohn in view of Carlbom and Guo do not render unpatentable the invention as claimed in claims 1, 12, 20, and 26. Newman does not cure their shortcomings.

Therefore, the combination cannot render obvious Applicant's invention as claimed in claims 8-11, 19, 25 and 31, and Applicant respectfully requests the withdrawal of the rejection of the claims under 35 U.S.C. § 103(a) over the combination.

SUMMARY

Claims 1-6, 8-17, 19-23, 25-31 are currently pending. In view of the foregoing amendments and remarks, Applicant respectfully submits that the pending claims are in condition for allowance.

If the Examiner determines the prompt allowance of these claims could be facilitated by a telephone conference, the Examiner is invited to contact Joseph W. Sosinski at (408) 720-8300 x7585.

Deposit Account Authorization

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due. Furthermore, if an extension is required, then Applicant hereby requests such extension.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

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